

# **Missouri Assessment Program Grade-Level Assessments**



## **Guide to Interpreting Results**

**Summative Assessments**  
*English Language Arts,  
Mathematics, and Science*

**April 2016**

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# INTRODUCTION

## Educational Assessment: A Primary Tool

Assessment, or testing, fulfills a vital role in today's educational environment. Assessment results often are a major force in shaping public perceptions about the capabilities of our students and the quality of our schools. As a primary tool for educators and policymakers, assessment is used for many important purposes. Educators use assessment results to help improve teaching and learning and to evaluate programs and schools. Policy decisions are often based, in part, on assessment data. Because of its important role, educational assessment is used in every school, district, and state. It is vital to innovation, higher standards, and educational excellence.

Originally developed in response to Missouri's Outstanding Schools Act of 1993, the **Missouri Assessment Program (MAP)** encompasses several statewide assessments that meet state and federal statutory requirements. **MAP Grade-Level Assessments** are administered to students in grades 3 through 8 to determine their progress toward the Show-Me Standards/Missouri Learning Standards. As directed by the Outstanding Schools Act, the Show-Me Standards were developed by the Missouri Department of Elementary and Secondary Education (DESE), in cooperation with teachers, school administrators, parents, and business professionals throughout the state, to identify the knowledge, skills, and competencies that Missouri students should acquire prior to graduating from high school. For a more detailed explanation of the Show-Me Standards, refer to the DESE website (<http://dese.mo.gov/show-me-standards>). The Missouri Learning Standards articulate the Show-Me Standards in each content area across the grade levels. MAP Grade-Level Assessment items are aligned with the Missouri Learning Standards, which are available on the DESE website (<http://dese.mo.gov/college-career-readiness/curriculum/missouri-learning-standards>).

The spring 2016 Grade-Level MAP includes the following required assessments:

English Language Arts (ELA)—Grades 3–8

Mathematics—Grades 3–8

Science—Grades 5 and 8

The ELA assessments for students in grades 3, 4, 6, and 7 required approximately 1½ to 2½ hours of test administration time. The ELA assessments for students in grades 5 and 8 required approximately 2½ to 4 hours. The Mathematics assessments for students in grades 3–5 required approximately 1 to 1½ hours of test administration time. The Mathematics assessments for students in grades 6–8 required approximately 1½ to 2 hours. In addition, students in grades 5 and 8 took a Science assessment that required an additional 2 to 2½ hours of test administration. All assessments were administered online, unless students required a Braille, Large Print, or paper/pencil form as an accommodation.

For all grade levels (3 through 8), the MAP Grade-Level Assessments in ELA and Mathematics include multiple item types. **Selected-response items** (also known as multiple-choice) present students with a question followed by three or more response options. **Short-text items** require students to type an appropriate response. **Technology-enhanced items** use innovative technology to allow students to demonstrate their knowledge in ways that are not possible using paper/pencil assessments. For example, the items may require students to drag and drop data into a table, click on "hot spots" within a graphic, or indicate their response on a grid. Short-text items are scored by trained readers using specific criteria. Trained readers are always humans, not machines. Some technology-enhanced items (for example, matching interaction) are machine scorable. Others are scored by trained readers.

The ELA assessments in grades 5 and 8 also include a **writing prompt**. Writing prompts are a special type of performance event in which a student demonstrates their proficiency at writing. The ELA writing prompt is scored by trained human readers using a 10-point rubric that evaluates purpose and organization, evidence and elaboration, and conventions.

The MAP Grade-Level Assessments in Science include selected-response items, as well as **constructed-response items**, which require students to supply their answer (similar to short-text items), and **performance events**. Science performance events require students to provide an extended response, and require students to apply their knowledge and understanding in real-life situations. Science constructed-response items and performance events are scored by trained readers using established scoring criteria.

The Department uses the information obtained through MAP to monitor the progress of Missouri's students toward meeting the Show-Me Standards in order to inform the public and the state legislature about student performance and to help make informed decisions about educational issues. The information obtained through MAP provides the academic performance data that drive student services throughout the state. The **MAP Grade-Level Assessment reports** provide useful information for determining the performance of individual students, as well as student performance at the classroom, building, and district levels.

# **ASSESSMENT TERMS AND TYPES OF SCORES**

Familiarity with the testing terms and the types of scores used in the MAP reports and other components will help you interpret test information accurately and efficiently.

## **MAP Scale Score**

Data Recognition Corporation (DRC), the MAP Grade-Level Assessments testing vendor, uses the student's correct responses to derive a MAP scale score. The scale score describes achievement on a continuum that in most cases spans the complete range of grades 3–8. These scores range in value from 470 to 895 for Science. The English Language Arts and Mathematics score range values will be available by September 1, 2016.

## **Achievement Levels**

Student performance can be reported in terms of four performance, or achievement, levels that describe a pathway to proficiency and college and career readiness. Each achievement level represents standards of performance for each assessed content area (English Language Arts, Mathematics, and Science). Panels drawn from educational, business, and professional communities determined the achievement standards. Achievement-level scores provide a description of what students can do in terms of the content and skills assessed, as described in the Missouri Learning Standards.

## **Lowest Obtainable Scale Score and Level Not Determined**

Within each grade level and content area, a Lowest Obtainable Scale Score (LOSS) is established for students whose scores are below the level expected by guessing. Students with certain accommodations that impact the construct being assessed (e.g., read-aloud of ELA passages for students in grades 3–5) also receive a LOSS.

A student may receive "Level Not Determined" (LND) instead of a MAP scale score. Students that receive LND are not assigned to an achievement level. Students may receive LND for either of the following reasons:

- A student does not attempt any items in one or more content areas of the MAP test.
- A student is absent for all testing sessions for a particular content area.

## **Standard Error of Measurement**

No test provides a perfect measure of a student's ability. This situation is expected because all tests have a known Standard Error of Measurement (SEM). The SEM reports the amount of variability that can be expected in a student's test score due to the inherent imprecision of the test. The SEM for the MAP test will be reported in the 2016 MAP Technical Report.

# **ACHIEVEMENT-LEVEL DESCRIPTORS**

## **English Language Arts, Reporting Achievement-Level Descriptors**

English Language Arts Achievement-Level Descriptors will be available by September 1, 2016.

## **Mathematics, Reporting Achievement-Level Descriptors**

Mathematics Achievement-Level Descriptors will be available by September 1, 2016.

## Science, Abbreviated Achievement-Level Descriptors

### Grade 5

#### ***Below Basic (Level 1)***

Students identify the relationship between mass and force; classify bodies of water; identify weather instruments and their uses; identify characteristics of the solar system; compare amounts/measurements given in a simple format; identify appropriate tools for simple scientific measurements; identify how technological advances may be helpful to humans.

MAP score range: 470–625

#### ***Basic (Level 2)***

Students explain the relationship between mass and force; describe how specialized body structures help animals survive; match environments to the plants and animals they support; identify environmental problems and find solutions; determine the appropriate scientific tool and its function in an investigation; determine how technological advances address problems and enhance life.

MAP score range: 626–668

#### ***Proficient (Level 3)***

Students describe changes in properties of matter; identify uses of simple machines; explain how work is done; identify forces of magnetism; describe the motion of objects; identify plant parts and their functions; classify vertebrates and invertebrates; classify producers, consumers, or decomposers; predict changes in food chains; identify the effects of human activities on other organisms; describe the Sun as a source of light and heat, or the moon as a reflector of light; explain the day/night cycle; interpret data; distinguish between man-made and natural objects; apply problem solving skills to a situation.

MAP score range: 669–691

#### ***Advanced (Level 4)***

Students identify energy transformations; predict the effect of heat energy on water; diagram a complete electrical circuit; predict how simple machines affect the force needed to do work; describe the effects of weathering and erosion on Earth's surface; describe relationships in weather data; explain how the Sun's position and the length and position of shadows relate to the time of day; interpret and apply knowledge from a data table; identify appropriate steps and tools in an investigation.

MAP score range: 692–855

### Grade 8

#### ***Below Basic (Level 1)***

Students identify simple terms related to matter and energy; demonstrate beginning understanding of properties of light and how it travels; identify structures of plants and animals needed for survival; identify levels of organization in multicellular organisms; read simple graphs and make simple data comparisons.

MAP score range: 540–670

#### ***Basic (Level 2)***

Students identify an example of a force; demonstrate simple understanding of how traits are passed from one generation to the next; have a basic understanding of climate; identify a simple hypothesis; recognize a trend in a data table; demonstrate some awareness of how various factors influence and are influenced by science and technology.

MAP score range: 671–702

#### ***Proficient (Level 3)***

Students classify types of motion; calculate the speed of an object; demonstrate simple understanding of life processes; classify and/or show relationships between organisms; explain how adaptations help organisms survive; explain how species are affected by environmental change; understand and describe a food web; explain rock and fossil evidence of changes in the Earth; explain how Earth's systems interact; draw conclusions from tables or graphs; demonstrate basic understanding of the solar system; recognize the need for, and calculate, averages; use appropriate tools and methods to collect data; describe tools and discoveries that advance scientific knowledge.

MAP score range: 703–734

#### ***Advanced (Level 4)***

Students explain the physical and chemical properties of matter; apply knowledge of energy and energy transfer; demonstrate understanding of physical and chemical processes of organisms; evaluate the effects of balanced and unbalanced forces; predict the impact of environmental change in ecosystems; justify how adaptations help organisms survive; demonstrate understanding of the water cycle; compare and contrast weather and climate; explain the cause of seasons on Earth; demonstrate understanding of the solar system; apply the concept of light years; apply awareness of the influence of science and technology in society.

MAP score range: 735–895



# SAMPLE REPORTS

## Individual Student Report (ISR)

The Individual Student Report (ISR) provides information about performance on the MAP Grade-Level Assessments, describing results in terms of four levels of achievement in a content area. This information may be used for instructional planning, as a point of reference during a parent/teacher conference, and for permanent record keeping. Other sources of information, such as classroom performance, should be used along with this report when determining the student's areas of strength or need.

Achievement-level scores describe what students can do in terms of the content and skills assessed by the MAP. Because the English Language Arts and Mathematics Missouri Learning Standards are grounded in expectations for college and career readiness, the MAP Grade-Level Assessments are designed to measure each student's progress toward meeting those expectations. Teachers, students, and parents/guardians can use this information in addition to how the student performs in the classroom to determine what skills and abilities need to be acquired to enable the student to progress to higher achievement levels. A student in the Proficient or Advanced level has met the standard. Students in the Below Basic and Basic levels have typically mastered skills described for their levels on pages 4–6, but need to work on skills in higher levels.

The following page contains a sample Individual Student Report.

- ❶ ***Student Report for:*** This area of the report is reserved for the name and biographical data of the student taking the assessment.
- ❷ ***How did your child perform?*** This is your child's scale score. The scale score is also printed in the left column under "Overview of Performance."
- ❸ ***Your child's achievement level is Proficient.*** Achievement levels (whether Advanced, Proficient, Basic, or Below Basic) are based on the test score ranges listed beneath each achievement level shown in the right column.
- ❹ ***Overview of Performance.*** The **Scale Score** is derived from student responses to assessment items. It summarizes the overall level of performance attained by your child for a particular content area.

# Missouri Grade-Level Assessment Program

## 2016 Individual Student Report



### 1 Student Report for:

Name WEBBER, PEGGY  
 Student ID 1234567890  
 Birthdate 12/02/2000  
 Grade 8  
 School ANY SCHOOL  
 District ANY DISTRICT

### 2 How did your child perform in Science?

**Your child received a score of 736.**

One way to measure performance is by achievement levels, which are based on scale scores. Achievement levels describe what your child's score means.

### 3 Your child's achievement level is Advanced.



**Advanced**  
 Scores of 735 and above demonstrate a thorough understanding of the content at this grade level.

**Proficient**  
 Scores at 703-734 demonstrate an understanding of the content expected at this grade level.

**Basic**  
 Scores at 671-702 demonstrate a partial understanding of the content expected at this grade level.

**Below Basic**  
 Scores at 670 and below do not demonstrate an understanding of the content expected at this grade level.

### 4 Overview of Performance

**Scale Score: 736**

This report provides information about achievement on the Missouri Assessment Program (MAP).

It is the policy of the Missouri Department of Elementary and Secondary Education not to discriminate on the basis of race, color, religion, gender, national origin, age, or disability in its programs or employment practices as required by Title VI and VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975 and title II of the Americans with Disabilities Act of 1990. Inquiries related to the Department programs and to the location of services, activities, and facilities that are accessible by persons with disabilities may be directed to the Jefferson State Office Building, Office of the General Counsel, Coordinator-Civil Rights Compliance (Title VI/Title IX/504/ADA/Age Act), 6th Floor, 205 Jefferson Street, P.O. Box 480, Jefferson City, MO 65102-0480; telephone number (573) 526-4757 or TTY (800) 735-2866; fax (573) 522-4883; email [civilrights@desse.mo.gov](mailto:civilrights@desse.mo.gov).

A single exam can provide only limited information. You should confirm your child's strengths and needs in these topics by reviewing classroom work, standards-based assessments, and your child's progress reports during the year.

**For more resources, go to**

<http://desse.mo.gov/college-career-readiness/assessment>



## Student Label

<b>MISSOURI ASSESSMENT PROGRAM</b> <b>SAMPLE, STUDENT1</b> <b>①</b> Grade: <b>Grade 5</b> Test Date: <b>04/04/2016</b> DOB: <b>01/01/2003</b> MOSIS State ID: <b>1234567890</b>	<b>Content Area</b> <b>English Language Arts</b>
	Achievement Level <b>Proficient ②</b>  MAP Scale Score <b>999 ③</b>
02/22/2016	

Above is a sample of the MAP student label. The student label is designed so that each student's test results can be placed in the student's permanent record. A label is provided for every student who participated in the spring 2016 administration of the MAP. Each label has a self-adhesive backing so that it can be peeled from the sheet and placed in the student's cumulative school record. The label presents a snapshot of the student's results on the MAP. Separate labels are generated for each grade and content area; thus, a student will have multiple labels—one for each of the content areas administered within a grade.

- ① **Student Demographic Information.** The left side of the label lists the name and biographical data of the student taking the assessment.
- ② **Achievement Level.** This is the student's Achievement Level (Advanced, Proficient, Basic, or Below Basic).
- ③ **Scale Score.** This is the student's Scale Score for the content area listed at the top of the label.

## **NOTICE OF NON-DISCRIMINATION**

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Inquiries related to Department employment practices may be directed to the Jefferson State Office Building, Human Resources Director, 8th Floor, 205 Jefferson Street, P.O. Box 480, Jefferson City, MO 65102-0480; telephone number (573) 751-9619 or TYY (800) 735-2966. Inquiries related to Department programs and to the location of services, activities, and facilities that are accessible by persons with disabilities may be directed to the Jefferson State Office Building, Office of the General Counsel, Coordinator–Civil Rights Compliance (Title VI/Title IX/504/ADA/Age Act), 6th Floor, 205 Jefferson Street, P.O. Box 480, Jefferson City, MO 65102-0480; telephone number (573) 526-4757 or TYY (800) 735-2966, email [civilrights@dese.mo.gov](mailto:civilrights@dese.mo.gov).

Anyone attending a meeting of the State Board of Education who requires auxiliary aids or services should request such services by contacting the Executive Assistant to the State Board of Education, Jefferson State Office Building, 205 Jefferson Street, Jefferson City, MO 65102-0480; telephone number (573) 751-4446 or TTY (800) 735-2966.

Inquiries or concerns regarding civil rights compliance by school districts or charter schools should be directed to the local school district or charter school Title IX/non-discrimination coordinator. Inquiries and complaints may also be directed to the Office for Civil Rights, Kansas City Office, U.S. Department of Education, 8930 Ward Parkway, Suite 2037, Kansas City, MO 64114; telephone number (816) 268-0550; FAX (816) 823-1404; TDD (877) 521-2172.





13490 Bass Lake Road  
Maple Grove, MN 55311